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Sami Nall, P.E.
Central Valley Flood Planning Office
Department of Water Resources
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Dear Ms. Nall:

RE: Comments on the Draft Sacramento River Basin-Wide Feasibility Study

Thank you for the opportunity to comment on the draft Sacramento River Basin-Wide Feasibility Study (BWFS) being developed by the Department of Water Resources (DWR). The Sacramento River BWFS evaluates options for improving the Sacramento Valley flood bypass system, including the Yolo, Sacramento and Sutter Bypasses. The Sacramento River BWFS analyzes five different alternatives for the Yolo Bypass, including one developed with local stakeholders. DWR is also developing a San Joaquin River BWFS to evaluate options for improving the flood management system in the San Joaquin River Basin. These two studies will be used to support the preparation of the 2017 update to the Central Valley Flood Protection Plan (CVFPP).

As you know, the mission of the Delta Stewardship Council (Council) is to promote the coequal goals of water supply reliability and ecosystem restoration in a manner that protects and enhances the unique values of the Delta as an evolving place (Water Code section 85054). Since the proposed activities of the draft Sacramento River BWFS include major changes to the Yolo Bypass, which is located, in part, in the Delta, it is essential that our agencies coordinate closely.

Delta Plan Consistency

The Council has a legally enforceable management framework for the Delta and Suisun Marsh called the Delta Plan. The Delta Plan seeks to achieve the coequal goals of protecting and enhancing the Delta ecosystem and providing for a more reliable water supply for California, in a manner that protects and enhances the Delta as an evolving place. State and local agencies are required to comply with the Council's 14 regulatory policies if their proposed activity is determined to be a "covered action" under the Delta Plan, which includes plans, programs, or projects (as defined by Public Resources Code Section 21065) that would occur, in whole or in part, within the Delta or Suisun Marsh.

While the BWFS does not meet the definition of a covered action, it is likely that the 2017 CVFPP update would be a "covered action" and would need to be designed and implemented consistent with Delta Plan requirements. In response to DWR's release of the Notice of Preparation (NOP) for the 2017 CVFPP Update Supplemental Program Environmental Impact Report (SPEIR), Council staff recently sent a comment letter (available on our website at http://deltacouncil.ca.gov/sites/default/files/2016/04/NOP_2017FloodPlanUpdate_DSCcomments_041416.pdf) to Michele Ng at DWR regarding the covered action process and Delta Plan policies related to the 2017 CVFPP update. Since the BWFS is a major component of the upcoming 2017 CVFPP, we encourage DWR to consider Delta Plan consistency where applicable when revising it.

Comments Regarding the BWFS

Below are comments that will help DWR strengthen the next draft of the BWFS and promote consistency of flood management planning efforts in the Delta and Yolo Bypass with Delta Plan policies and recommendations.

Best Available Science and Adaptive Management

The BWFS proposes a phased planning and implementation framework for flood system improvements in the Sacramento River Basin. We recommend that DWR incorporate adaptive management the framework. This approach will ensure that planning objectives are met and lessons learned will be applied to future projects and next steps during the development and implementation of the CVFPP. The Delta Plan Appendix 1B (available at http://deltacouncil.ca.gov/sites/default/files/2015/09/Appendix%201B.pdf) provides guidance on how to develop an adaptive management plan. Also, monitoring is a key component of adaptive management. To achieve ecosystem and habitat enhancement goals, as part of an integrated flood management approach, DWR should include monitoring plans with measurable objectives. In addition to monitoring habitat creation and removal, monitoring use of the habitats by intended species can provide useful feedback to guide performance improvement over time.

The Delta Plan also calls for the use of best available science (refer to **Delta Plan Policy G P1**). In addition to the identified reference and data used, the project team should ensure that ongoing science activities will be continuously investigated, evaluated, and incorporated during the process of developing the BWFS as well as the 2017 CVFPP.[1] To help explain what constitutes "best available science", Appendix 1A of the Delta Plan (available at http://deltacouncil.ca.gov/sites/default/files/2015/09/Appendix%201A.pdf) provides a list of criteria for proponents to consider, including: relevance, inclusiveness, objectivity, transparency and openness, timeliness and peer review.

[1] An example of a recently published relevant document is Suddeth, R and J. Lund. 2016. Multi-Purpose Optimization for Reconciliation Ecology on an Engineered Floodplain: Yolo Bypass, California. *San Francisco Estuary and Watershed Science* 14(1).

Delta Science Program staff can provide consultation to assist in documentation of use of best available science and adaptive management. Please contact Jiro Ariyama (Jiro.Ariyama@deltacouncil.ca.gov) to arrange consultation.

Alternatives Development and Analysis

Council staff appreciates the level of detail and analysis that went into assessing each of the five alternatives for Yolo Bypass modifications. We have a few suggestions regarding the alternatives' analyses and description that will improve clarity of the BWFS.

Although we understand that the BWFS is not a decision document, it would be beneficial if the BWFS was more explicit in describing how the five Yolo Bypass alternatives were developed and why DWR staff selected the Recommended Option (RO). The main BWFS document analyzes the effects of five different Yolo Bypass Options, but does not include a similar analysis of the RO. This RO appears to be very similar to Yolo Bypass Option 3 but it includes elements of Yolo Bypass Option 5, such as a longer extension of the Fremont Weir. The next iteration of the BWFS should include an analysis of the hydrologic impacts under the RO. The analysis should include an assessment of impacts to flood stage relative to baseline and the effects of the altered flow regime to Yolo Bypass levees, as was done for Yolo Bypass Options 1 through 5. These results will be essential to evaluate the effectiveness of the RO for flood system improvements compared to the other alternatives.

Delta Levees Investment Strategy

The Delta Reform Act of 2009 called on the Council to lead a multi-agency effort to establish and adopt priorities for State investments in Delta levees operations, maintenance, and improvements (Water Code section 85306). The Council adopted interim priorities in 2013 (23 CCR 5012), and is now engaged in updating these priorities through the development of the Delta Levee Investment Strategy (DLIS). For more information, please refer to http://deltacouncil.ca.gov/delta-levees-investment-strategy. We appreciate DWR's continuous assistance and participation in the development of the DLIS. The DLIS team is collecting information on potential levee and flood system-related habitat projects to develop levee improvement investment concepts. As such, the levee improvement investment concepts may incorporate information developed for the BWFS. We look forward to further coordination between the DWR project team and our DLIS team during the 2017 CVFPP update process.

Downstream Effects to the Delta

Although we agree with a basin-wide approach, DWR should also investigate and evaluate any potential downstream affects to the Delta in the development of the BWFS and relevant environmental impact assessments. According to the BFWS hydraulic analyses under the "scaled 120% of the 1997 flood event" scenario, the outcome of the proposed modifications to the Yolo Bypass (i.e., Yolo Bypass Options 1 through 5) may increase the flood stage 0.1-0.2 feet near the Rio Vista area. DWR proposes to construct a flood wall along the Sacramento River near Rio Vista as a flood risk reduction measure. However, it is unclear how this increased flood stage will impact the Delta in combination with the other proposed activities

through the Regional Flood Management Plans and the future San Joaquin Basin-Wide Feasibility Study. In addition, the BWFS includes proposed measures to extend the functional life of the Cache Creek Settling Basin. The outcome of this activity may have potential impacts to the Delta in terms of methylmercury management. The project team should consider Delta Plan Recommendation **WQ R8** which recommends that proponents of projects that may impact methylmercury loading in the Delta or Suisun Marsh should participate in control studies or implement site-specific study plans that evaluate practices to minimize methylmercury discharges.

Yolo Bypass Analysis Refinement

Council staff is pleased to see that DWR has allowed the local stakeholders from FloodProtect (i.e., the Lower Sacramento/North Delta Regional Flood Management Plan group) to develop an alternative for the BWFS. We believe that healthy dialogue between the agencies and stakeholders can help foster a culture of collaboration and creative ideas that can help result in better designed projects. The recently formed Yolo Bypass and Cache Slough Partnership—a group of State, federal, and local agencies including DWR—would be a great venue to discuss and receive feedback on the BWFS.

The BWFS ecosystem effects analyses do not capture the ecosystem benefits that will occur outside of the Yolo Bypass planning area as identified by the FloodProtect stakeholders during development of Yolo Bypass Option 5. Since the BWFS focuses on the Sutter and Yolo Bypasses, and a potential Feather River bypass, it is difficult to effectively compare the ecosystem benefits of the locally developed option and the alternatives that DWR developed. When just focusing on the Yolo Bypass, the BWFS analyses indicate that the locally developed Regional Option contains substantially less habitat improvements for key habitat types, including riparian habitat and shaded riverine aquatic, compared to the other alternatives developed by DWR. This is a result of the Regional Option maintaining agricultural uses in areas where the Yolo Bypass will be expanded (e.g., a portion of Elkhorn Basin) instead of setting this area aside for habitat and planting trees.

While the Council applauds the effort of DWR staff to integrate habitat restoration within Yolo Bypass alongside flood system improvements, we hope that DWR does not overlook the value of habitat along other important habitat corridors. The final BWFS or its supporting documents should include the total net benefit from the proposed activity along the Yolo Bypass as well as the habitat improvements along the associated Sacramento River reaches. Habitat enhancements here can provide improved channel margin conditions along a major Chinook salmon migratory corridor and this habitat zone represents a major migratory corridor for many riparian species.

The analysis supporting the BWFS should also address the feasibility of using the Sacramento Deep Water Ship Channel (DWSC) as a supplemental flood conveyance corridor during periods of high outflow. A tie-in to the DWSC is a common theme among all the Yolo Bypass alternatives and the hydrologic analysis provided within the Yolo Bypass Option 3 estimates that stage within this channel could increase by a rather substantial 1.6 feet during high flow events. According to Figure 5-3 of the BWFS and the outcomes of DWR Urban Levee and

Non-urban Levee Evaluations, levee segments around the Clarksburg area are categorized as "high concern." Given the potential increasing flood risk and current levee condition, it is unclear if there are existing or future DWR programs to mitigate these known deficiencies. We recommend a more thorough analysis and additional information of whether the DWSC levees would be capable of containing such a flow without placing Delta communities, such as Clarksburg, at additional flood risk.

Agricultural Resources

An issue of key importance for the local stakeholders is the protection of agricultural sustainability in the Yolo Bypass. Agricultural land preservation and economic sustainability are also key issues called out in the Yolo Bypass and Cache Slough Partnership Memorandum of Understanding (MOU). The Delta Plan seeks to balance existing uses of the Delta, including ecosystem restoration and the region's agricultural legacy. Table 5-11 of the BWFS would benefit from a comparison summarizing the impacts to agricultural land productivity under each of the alternatives assessed in the BWFS. Such an analysis would help provide a more comprehensive view of the advantages and disadvantages of each alternative. The tables in the BWFS make it clear that there would be fewer opportunities to increase riparian habitat under the Regional Option, relative to the alternatives developed by DWR, but give little context for how the Regional Option may better protect existing Delta agricultural uses.

Recreation

Council staff appreciates the DWR analyses of how each of the five Yolo Bypass alternatives may affect recreation in the region. As you are aware, the Delta Plan has multiple recommendations regarding expanding recreational use in the Delta and Yolo Bypass. Delta Plan Recommendation **DP R11** calls for increasing and protecting recreational facilities and opportunities, using the California State Parks' *Recreation Proposal for the Sacramento-San Joaquin Delta* and Suisun Marsh and the Delta Protection Commission's *Economic Sustainability Plan* as guides. The State Park's Proposal includes increasing recreational facilities in Elkhorn Basin (e.g., picnic sites, trails, interpretative services). Delta Plan Recommendation **DP R16** calls for encouraging recreation on public lands including, where feasible, increasing opportunities for bank fishing, hunting, levee-top trails, and environmental education. An approach to providing recreation could be to extend public access from West Sacramento Industrial Boulevard and/or Channel Drive to and along the Yolo Bypass levee between these two roads, including access to Toe Drain for anglers and birders.

Federal Interest

Council staff shares the DWR's concern regarding uncertain federal interest in flood system improvements in the Delta, as well as the Central Valley, and we support DWR's approach to helping the U.S. Army Corps of Engineers (USACE) to establish such a federal interest. Council staff has sent letters of support for the USACE to continue conducting planning studies that may identify a federal interest in flood risk reduction in this region. Through the Sacramento River General Reevaluation Report scoping process, Council staff also encouraged USACE staff to assess the feasibility of a hydrologic connection between the

Prospect Island Tidal Marsh Restoration Project and the DWSC in order to enhance key ecosystem processes. Achieving recognition of greater federal interest through the USACE planning processes can be challenging, so we encourage DWR to work with other State agencies to identify existing programs or to create new programs to solve identified system deficiencies given the possibility of an absence of federal assistance.

Hydraulic Analyses

The use of multiple hydraulic scenarios needs additional explanation and clarification. The BWFS indicates that the 1997 flood event is scaled by 120% and is being used as an approximate flood to represent 200-year flood flows with climate change. The BWFS evaluates the existing system under potential future conditions using three different flood flows scaled up in magnitude by 110%, 120%, and 130% of the 1997 storm event for the existing levee geotechnical conditions evaluation, existing freeboard evaluation, and the Fremont Weir future performance evaluation, respectively. The final BWFS should clearly state the significance and limitations of using different flood flows for various modeling components of the BWFS.

Climate Change Assessments

According to the Governor's Executive Order B-30-15, State agencies shall take climate change into account in their planning and investment decisions and employ full life-cycle cost accounting to evaluate and compare infrastructure investments and alternatives. The BWFS states "climate change assessments will be conducted for the Sacramento River Basin at least once every 10 years to better inform the next phases of planning and implementation." Council staff applaud DWR's effort in considering climate change as a critical factor for current and future planning processes. To better inform the proposed climate reassessments, the project team should coordinate with the Natural Resources Agency and other State agencies to track the latest State guidance reports such as the forthcoming 2016 update to the *State of California Sea-level Rise Guidance Document*, *Safeguarding California: Reducing Climate Risk* (2014), and *Safeguarding California: Implementation Action Plans* (2016).

Final Remarks

If you have any questions or need any clarification regarding our comments, I encourage you to contact Dustin Jones at 916-445-5891 or Dustin.Jones@deltacouncil.ca.gov.

Sincerely,

C. Enos-Nobriga

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